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<u>L8</u>	17 same antibiotic\$5	20	<u>L8</u>
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<u>L6</u>	15 same antibiotic\$5	19	<u>L6</u>
<u>L5</u>	ryegrass\$5	1402	<u>L5</u>
<u>L4</u>	11 same l2	1	<u>L4</u>
<u>L3</u>	11 and l2	70	<u>L3</u>
<u>L2</u>	antibiotic	95371	<u>L2</u>
<u>L1</u>	rye grass	720	<u>L1</u>

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(FILE 'HOME' ENTERED AT 15:08:27 ON 13 JUN 2003)

FILE 'CA, MEDLINE' ENTERED AT 15:08:58 ON 13 JUN 2003

FILE 'MEDLINE, BIOSIS, CA' ENTERED AT 15:09:07 ON 13 JUN 2003

L1 4637 S RYE GRASS?
L2 483986 S ANTIBIOTIC?
L3 11 S L1 AND L2
L4 10 DUP REM L3 (1 DUPLICATE REMOVED)
L5 22049 S RYEGRASS? OR (RYE GRASS?) OR (SECALE CEREALE?)
L6 483986 S ANTIBIOTIC?
L7 56 S L5 (P) L6
L8 34 DUP REM L7 (22 DUPLICATES REMOVED)

=>

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L8: Entry 18 of 20

File: USPT

Jul 27, 1993

DOCUMENT-IDENTIFIER: US 5231019 A

TITLE: Transformation of hereditary material of plants

Detailed Description Text (107):

Protoplasts of *Lolium multiflorum* (Italian ryegrass) are taken up at a concentration of 2.10×10^6 per ml in 1 ml of 0.4 molar mannitol at pH 5.8. To this suspension are added, in succession, 0.5 ml of 40% polyethylene glycol (PEG) with a molecular weight of 6000 in modified (pH 5.8) F medium [Nature 296, 72-74 (1982)], and 65 μ l of an aqueous solution containing 15 μ g of the plasmid pABDI and 50 μ g of calf thymus DNA. This mixture is incubated for 30 minutes at 26 degree C. with occasional agitation and subsequently diluted with F medium, as described in Nature 296 (1982), 72-74. The protoplasts are isolated by centrifugation (5 minutes at 100 g) and taken up in 4 ml of CC culture medium [Potrykus, Harms, Lorz, Callus formation from cell culture protoplasts of corn (*Zea Mays* L.), Theor. Appl. Genet. 54, 209-214 (1979)] and incubated in the dark at 24 degree C. After 14 days the developing cell cultures are transferred to the same culture medium, but with the the antibiotic G-418 (commercially available; GIBCO EUROPE Product Catalogue, Catalogue No. 0661811). G-418 is toxic to *Lolium* cells at a concentration of 25 mg/l and permits solely the further development of cells which have taken up the bacterial gene for kanamycin resistance. G-418 is a kanamycin analog with substantially better activity in graminaceous cells than kanamycin itself. Resistant cell colonies are transferred to agar medium (the same medium as above, 25 ml/l G-418, without osmoticum) and, after reaching a size of several grams fresh weight per cell colony, analysed for the presence of the bacterial gene and for the biological activity of the gene. The former analysis is made by hybridisation of a radioactively labelled DNA sample of the gene with DNA which has been isolated from the cell culture; while the latter is made by detecting the enzyme activity by phosphorylation of kanamycin with radioactive ATP. Both molecular analyses yielded unequivocal proof of the genetic transformation of the cell colonies which had been selected on G-418. The assays constitute the first proof of the genetic transformation of protoplasts of graminaceous plants and furthermore prove that, in principle, protoplasts of grasses can be genetically manipulated by the described process. The possibility of genetically manipulating cultivated grasses, for example cereals, is thus also afforded.

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L8: Entry 11 of 20

File: USPT

Jun 6, 2000

DOCUMENT-IDENTIFIER: US 6072107 A

**** See image for Certificate of Correction ****

TITLE: Ryegrass endophytes.

Detailed Description Text (26):

Ryegrass seeds containing endophyte were surface sterilized by soaking for 20 minutes in 50% sulphuric acid followed by rinsing several times in sterile water, soaking in 10% sodium hypochlorite solution for 20 minutes and rinsing again in sterile water. All surface sterilized tissues were placed on potato dextrose agar containing antibiotics (100 .mu./ml streptomycin+100 .mu.g/ml penicillin) in Petri dishes and incubated at 20.degree. C. for 4-5 weeks. By this time colonies of endophytes had sufficient growth to enable them to be used for inoculating grass seedlings.

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NEWS	27	Mar 20	EVENTLINE will be removed from STN
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NEWS	29	Mar 24	Additional information for trade-named substances without structures available in REGISTRY
NEWS	30	Apr 11	Display formats in DGENE enhanced
NEWS	31	Apr 14	MEDLINE Reload
NEWS	32	Apr 17	Polymer searching in REGISTRY enhanced
NEWS	33	Jun 13	Indexing from 1947 to 1956 added to records in CA/CAPLUS
NEWS	34	Apr 21	New current-awareness alert (SDI) frequency in WPIDS/WPINDEX/WPIX
NEWS	35	Apr 28	RDISCLOSURE now available on STN
NEWS	36	May 05	Pharmacokinetic information and systematic chemical names added to PHAR
NEWS	37	May 15	MEDLINE file segment of TOXCENTER reloaded
NEWS	38	May 15	Supporter information for ENCOMPPAT and ENCOMPLIT updated
NEWS	39	May 16	CHEMREACT will be removed from STN
NEWS	40	May 19	Simultaneous left and right truncation added to WSCA
NEWS	41	May 19	RAPRA enhanced with new search field, simultaneous left and right truncation
NEWS	42	Jun 06	Simultaneous left and right truncation added to CBNB

NEWS 43 Jun 06 PASCAL enhanced with additional data

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=> file ca, biosis. medline

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=> file medline, biosis, ca

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FULL ESTIMATED COST	0.78	0.99

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=> s rye grass?

L1 4637 RYE GRASS?

=> s antibiotic?

L2 483986 ANTIBIOTIC?

=> s l1 and l2

L3 11 L1 AND L2

=> dup rem l3

PROCESSING COMPLETED FOR L3

L4 10 DUP REM L3 (1 DUPLICATE REMOVED)

=> d 1-10 ab,bib

L4 ANSWER 1 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB A multiple-antibiotic resistant *E. coli* was applied to rye-grass covered field mini-plots to simulate point-source contamination. Using three mini-plots for testing and a fourth as a control, the ability of the tracer bacterium to survive under field conditions was studied. Three test plots each received separately 10⁷, 10⁸, or 10¹⁰ cfu mL⁻¹ *E. coli* grown for 24 h in 5 L one-third strength Tryptic soy broth. In Phase I of the study, it was determined that the tracer disappeared from leaf surfaces of rye-grass covering the plots after 41 days. In Phase II, determination of the presence of the tracer in the top 2" (5 cm) of soil after two months elapsed time indicated that tracer cfu/g dry wt. of soil had declined five, three, and three-logs for test plots 1, 2, and 3. In Phase III, subsurface soil sampling using a soil auger on the three test mini-plots indicated the tracer had penetrated through the top-soil and into the underlying B horizon (20 to 50 cm down). In Phase IV, detailed sampling by excavation of the subsurface soil Horizons of the third test mini-plot showed that the tracer had also penetrated through the hardpan (C Horizon) located 0.6 m below the surface to enter the groundwater (1.06 m deep) (Phase V). *E. coli* counts fell precipitously to 10⁻³ cfu g⁻¹ in soil and then, in the groundwater at the groundwater-soil interface, persisted at a concentration of 10⁻³ cfu 100 mL⁻¹ for 2 yr. As time past, tracer counts fell to 145 cfu/100 mL in 6 yr rose to 820 cfu 100 mL⁻¹ in 1986 (8 yr elapsed time), and then fell to 25 cfu 100 mL⁻¹ in 1991 after 13 yr. Serotyping of 1986 *E. coli* isolates indicated that 62% were of the original tracer serotype (0.128:B12) while only 43% of the 1991 isolates were of the same serotype. The penetration rate of the tracer down through the mini-plot soil into the groundwater was 0.02 m day⁻¹ while downslope dispersion occurred at an estimated rate of 1.0 m day⁻¹. The implications of the above findings are discussed.

AN 1995:391376 BIOSIS

DN PREV199598405676

TI Thirteen-year survival study of an environmental *Escherichia coli* in field mini-plots.

AU Sjorgren, Robert E.

CS Dep. Microbiol. Mol. Genetics, Univ. Vermont, Burlington, VT 05405 USA

SO Water Air and Soil Pollution, (1995) Vol. 81, No. 3-4, pp. 315-335.

ISSN: 0049-6979.

DT Article

LA English

L4 ANSWER 2 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AN 1989:421316 BIOSIS

DN BR37:76779

TI SOIL SURVIVAL OF *ESCHERICHIA-COLI* LABORATORY MICROCOSMS AND FIELD PLOTS.

AU SJOGREN R E

CS UNIV. VERMONT, BURLINGTON, VERMONT.

SO 89TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS, LOUISIANA, USA, MAY 14-18, 1989. ABSTR ANNU MEET AM SOC MICROBIOL. (1989) 89 (0), 353.

CODEN: ASMACK. ISSN: 0094-8519.

DT Conference

FS BR; OLD

LA English

L4 ANSWER 3 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB The corynetoxins, toxic metabolites of *C. rathayi* formed in galled seed-heads of infected annual ryegrass, *L. rigidum*, are new members of the tunicamycin group of **antibiotics**. They consist of N-acetylglucosaminyl-tunicaminy-uracil in amide linkage with fatty acids which differ in certain respects from those present in the tunicamycins. The corynetoxin acids are of slightly longer chain length, C15-C19, occur in a .beta.-hydroxy as well as saturated and .alpha., .beta.-unsaturated series, and have anteiso, iso and normal chain terminations. .beta.-Hydroxy acids have not been observed previously in the tunicamycin group and anteiso chains were reported only recently in the streptovirudin subgroup. Stereochemical identity of the C11-amino sugar in the corynetoxins with the tunicamine part of the tunicamycins is demonstrated by formation of a common hydrolysis product, di(N-trifluoroacetyl)glucosaminyl-tunicaminy-uracil. Analysis of the ¹³C and proton NMR spectra of the main components, corynetoxins H17a and U17a, confirms the stereochemistry proposed for tunicamine, except that the glycosidic linkages are changed to .alpha.-galactosamine, .beta.-glucosamine.

AN 1984:283787 BIOSIS
 DN BA78:20267
 TI STRUCTURE OF THE CORYNE TOXINS METABOLITES OF CORYNEBACTERIUM-RATHAYI RESPONSIBLE FOR TOXICITY OF ANNUAL RYE GRASS LOLIUM-RIGIDUM PASTURES.

AU FRAHN J L; EDGAR J A; JONES A J; COCKRUM P A; ANDERTON N; CULVENOR C C J
 CS DIV. ANIM. HEALTH, CSIRO, PRIVATE BAG NO. 1, PARKVILLE, VIC. 3052.
 SO AUST J CHEM, (1984) 37 (1), 165-182.
 CODEN: AJCHAS. ISSN: 0004-9425.

FS BA; OLD
 LA English

L4 ANSWER 4 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB The biological activities of corynetoxins, the causative agents of annual ryegrass toxicity [a disease of grazing livestock], were compared with those of the closely related tunicamycins and found to be essentially identical. They showed similar **antibiotic** activity against Newcastle disease virus and a range of gram-positive bacteria. In preparations of rat liver rough microsomes they strongly inhibited the uridine diphospho-N-acetylglucosamine:dolichol-P N-acetylglucosamine-1-phosphate transferase, an enzyme essential for N-glycosylation of glycoproteins. Pretreatment of rats with corynetoxins resulted in dose- and time-related reduction in the level of activity of this transferase in liver microsomal preparations. The implications of this reduction are discussed with reference to annual ryegrass toxicity, the only field disease known to be caused by tunicamycin-related compounds. Corynetoxin and tunicamycin produced similar neurological effects and increased vascular permeability in nursing rats; they showed similar LD50 of 137 and 132 .mu.g/kg, respectively, in the nursing rats.

AN 1984:291913 BIOSIS
 DN BA78:28393
 TI INHIBITION OF GLYCOSYLATION BY CORYNE TOXIN THE CAUSATIVE AGENT OF ANNUAL RYE GRASS LOLIUM-RIGIDUM TOXICITY A COMPARISON WITH TUNICAMYCIN.

AU JAGO M V; PAYNE A L; PETERSON J E; BAGUST T J
 CS CSIRO DIV. ANIM. HEALTH RES. LAB., PRIVATE BAG NO. 1, P.O., PARKVILLE, VICTORIA 3052, AUST.
 SO CHEM-BIOL INTERACT, (1983) 45 (2), 223-234.
 CODEN: CBINA8. ISSN: 0009-2797.

FS BA; OLD
 LA English

L4 ANSWER 5 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB A comparative study between the glycolipid toxins (corynetoxins) isolated from parasitized annual ryegrass and the nucleoside **antibiotic** complex tunicamycin revealed many similarities in physical, chemical and

biological properties. These similarities suggest that the corynetoxins comprise another series of tunicamycin-like **antibiotics**.

AN 1982:286922 BIOSIS

DN BA74:59402

TI GLYCO LIPID TOXINS FROM PARASITIZED ANNUAL **RYE GRASS**

LOLIUM-RIGIDUM A COMPARISON WITH TUNICAMYCIN.

AU VOGEL P; STYNES B A; COACKLEY W; YEOH G T; PETTERSON D S

CS DEP. AGRICULTURE, JARRAH RD., SOUTH PERTH, WESTERN AUSTRALIA, 6151.

SO BIOCHEM BIOPHYS RES COMMUN, (1982) 105 (3), 835-840.

CODEN: BBRCA9. ISSN: 0006-291X.

FS BA; OLD

LA English

L4 ANSWER 6 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
1

AN 1982:136864 BIOSIS

DN BR23:66856

TI CORYNE TOXINS CAUSATIVE AGENTS OF ANNUAL **RYE GRASS**

LOLIUM-RIGIDUM TOXICITY THEIR IDENTIFICATION AS TUNICAMYCIN GROUP
ANTIBIOTICS.

AU EDGAR J A; FRAHN J L; COCKRUM P A; ANDERTON N; JAGO M V; CULVENOR C C J;

JONES A J; MURRAY K; SHAW K J

CS C.S.I.R.O, DIV. ANIMAL HEALTH, PRIVATE BAG NO. 1, PARKVILLE, VICTORIA
3052, AUSTRALIA.

SO J. Chem. Soc., Chem. Commun., (1982) 0 (4), 222-224.

CODEN: JCCCAT. ISSN: 0022-4936.

FS BR; OLD

LA English

L4 ANSWER 7 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AB The following fungi showed strong **antibiotic** action against *P. radiculicola* var. *graminicola* on agar medium: *Drechslera sorokiniana* (Sacc). Sub & Jain, *Aspergillus niger* Tiegh, *Botrytis cinerea* Pers., *Trichoderma viride* Pers. The following fungi had a moderate effect: *A. flavus* Link and *Rhizopus nigricans* Ehrenb. All the remaining fungi reduced the growth of *P. radiculicola* only slightly. In joint infection of roots the ability of these fungi to give strong antagonistic effect was lower; on the contrary, the spread of *Phialophora* on ryegrass roots was inhibited to the highest degree by *Ophiobolus graminis*. The attack of wheat roots was reduced by *P. radiculicola* only in *O. graminis*.

AN 1979:137841 BIOSIS

DN BA67:17841

TI THE ANTAGONISM OF PHIALOPHORA-RADICICOLA-VAR-GRAMINICOLA AND SOME FUNGI
FROM THE ROOTS OF WHEAT.

AU NOVOTNY J

CS VYZ. USTAV ZAKL. AGROTECH., 664 62 HRUSO VANY U BRNA, CZECH.

SO OCHR ROSTL, (1978) 14 (1), 35-40.

CODEN: OCROAP.

FS BA; OLD

LA Czech

L4 ANSWER 8 OF 10 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AN 1976:168858 BIOSIS

DN BA61:68858

TI THE CONTROL OF COMMON POTATO SCAB BY MEANS OF CULTURE METHODS.

AU WENZL H

SO Z PFLANZENKR PFLANZENSCHUTZ, (1975) 82 (6-7), 410-440.

CODEN: ZPFPAA. ISSN: 0340-8159.

FS BA; OLD

LA Unavailable

L4 ANSWER 9 OF 10 CA COPYRIGHT 2003 ACS

AB Isolation by Ishibashi (CA 62: 2002a) from the culture broth of *Helminthosporium siccans*, a parasitic organism of **rye**

grass, gave a phenolic antibiotic, siccanin (I) m. 138.degree., [.alpha.]16D - 150.degree. (c 7.75, CHCl3), fungicidal esp. against Trichophyton interdigitale and T. asteroides at 0.1 .mu.g./ml. I, A 3-dimensional x-ray diffraction study was carried out on I p-bromobenzenesulfonate ester, C28H33BrO5S, m. 156.degree.. The crystals are orthorhombic space group P212121, with a 11.06, b 22.87, and c 10.34 A.; Z = 4. Three-dimensional intensity data were collected from the a and c axes by equi-inclination Weissenberg photographs, and a total of 1537 reflections were estd. visually. The structure was solved by the heavy atom method with several Fourier and difference Fourier syntheses. The parameters were refined by 3 cycles of full matrix least sqs. calcns. to an R-value of 0.155. The abs. configuration was detd. by the anomalous dispersion effect of the Br atom for Cu K.alpha. radiation. The cis fusion of the Decalin system may be the 1st example of the naturally occurring drimane skeleton.

AN 67:112130 CA
 TI Structure of siccanin
 AU Hirai, Koichi; Nozoe, Shigeo; Tsuda, Kyosuke; Iitaka, Yoichi; Ishibashi, Keijiro; Shirasaka, Makoto
 CS Univ. Tokyo, Tokyo, Japan
 SO Tetrahedron Letters (1967), (23), 2177-9
 CODEN: TELEAY; ISSN: 0040-4039
 DT Journal
 LA English

L4 ANSWER 10 OF 10 CA COPYRIGHT 2003 ACS

AB Thirty-six newborn Guernsey and Jersey calves were allotted to 6 groups which were identical as to sex and breed and similar in wt. and height at withers. The system included confinement in individual pens and feeding of pure colostrum through 4 days of age, one-half colostrum and one-half skim milk through 21 days, and skim milk until calves were 60 days old. All milks were fed at the rate of 9% of body wt., 2 equal portions daily. Chopped alyce clover hay and mixed concentrates were offered, free choice. Methionine and K orotate, each 220 mg./100 lb. body wt., were fed to all subjects other than the controls. Chlortetracycline, 45 or 90 mg./100 lb. live wt., or 1 of the other antibacterial agents was dispersed in the milk fed to calves, as follows: group 3, chlortetracycline; group 4, p-aminosalicylic acid (PAS); group 5, isoniazid, and group 6, erythromycin. Daily records included observations on general health and consumption of feed. Body wts. and heights at withers were recorded on the 4th-day postpartum and at weekly intervals thereafter. All calves were sleek and alert, and no differences in appearance between groups were discernible. Av. gains in body wt. were higher in all treated calves than in the controls. However, these differences were not statistically significant. Changes in height at withers and efficiency of feed utilization appeared to be unaffected by any of the supplements.

AN 52:117037 CA
 OREF 52:20764h-i,20765a-b
 TI Effect of potassium orotate and methionine alone and with various antibacterial agents in a high colostrum diet for young calves
 AU Wing, J. M.
 CS Florida Agr. Expt. Sta., Gainesville
 SO Journal of Dairy Science (1958), 41, 1290-1
 CODEN: JDSCAE; ISSN: 0022-0302
 DT Journal
 LA Unavailable

=> s ryegrass? or (rye grass?) or (secale cereale?)
 L5 22049 RYEGRASS? OR (RYE GRASS?) OR (SECALE CEREALE?)

=> s antibiotic?
 L6 483986 ANTIBIOTIC?

=> s 15 (p) 16

L7 56 L5 (P) L6

=> dup rem 17

PROCESSING COMPLETED FOR L7

L8 34 DUP REM L7 (22 DUPLICATES REMOVED)

=> d 1-34 ab,bib

L8 ANSWER 1 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
1

AB Two UK grassland soils, one from Rothamsted (24% clay) and the other from Woburn (8% clay) were incubated at 25degreeC, unamended or amended with **ryegrass** followed by fumigation 20 d later followed by a further 20 d incubation. Other portions of the Rothamsted grassland soil were treated separately with a fungicide (Captan), a bacteriocide (Bronopol), or a herbicide (Dinoseb). The substrate-induced respiration (SIR) method coupled with use of **antibiotics** (selective inhibition) and biovolume measurements by direct microscopy were used to comparatively measure total microbial biomass and the proportions of fungal and bacterial biomass in these two treated soils. Both methods gave similar estimates of total microbial biomass and the proportions of bacteria and fungi in the two soils. The different treatments did not significantly change the proportions of bacteria and fungi in the soil microbial biomass. It was concluded that both SIR and biovolume measurements are equally valid in measuring total biomass as are selective inhibition and biovolume measurements in measuring the proportions of fungi and bacteria in soils which are either unamended or undergoing rapid changes in metabolism due to substrate amendment, fumigation or biocidal treatments.

AN 1999:536847 BIOSIS

DN PREV199900536847

TI Comparison of substrate induced respiration, selective inhibition and biovolume measurements of microbial biomass and its community structure in unamended, ryegrass-amended, fumigated and pesticide-treated soils.

AU Lin, Q.; Brookes, P. C. (1)

CS (1) Soil Science Department, IACR-Rothamsted, Harpenden, Hertfordshire, AL5 2JQ UK

SO Soil Biology & Biochemistry, (Dec., 1999) Vol. 31, No. 14, pp. 1999-2014. ISSN: 0038-0717.

DT Article

LA English

SL English

L8 ANSWER 2 OF 34 CA COPYRIGHT 2003 ACS

AB Under field conditions annual **ryegrass** toxicity in sheep is seen principally as an acute neurol. disturbance with high morbidity and mortality rates. It is caused by the ingestion of corynetoxins produced by the bacterium, *Clavibacter toxicus*, which infects seed heads of annual **ryegrass**, *Lolium rigidum*. These toxins are closely the tunicamycin group of **antibiotics** both structurally and in biol. activity. The possibility of an assocn. between annual **ryegrass** toxicity and infertility in sheep arose several years ago from anecdotal reports by farmers in South and Western Australia of lambing rates being severely depressed in the breeding season following an outbreak of the disease. To investigate this, an initial series of expts. were carried out in rats, using tunicamycin because of its com. availability. It was shown that large doses of tunicamycin did not affect the reproductive performance of females, but in males doses insufficient to produce significant clin. signs induced destruction of seminiferous tubule epithelium and led to permanent testicular atrophy. Here we report the extension of this investigation to the effect of tunicamycin on the semen and reproductive tract of rams.

AN 129:271708 CA

TI Lack of effect of tunicamycin on spermatogenesis in rams

AU Stewart, P. L.; Jago, M. V.; Dufty, J. H.; Peterson, J. E.
CS Plant Toxins Unit, CSIRO Australian Animal Health Laboratory, Geelong,
3220, Australia
SO Australian Veterinary Journal (1998), 76(4), 289-290
CODEN: AUVJA2; ISSN: 0005-0423
PB Australian Veterinary Association
DT Journal
LA English

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 3 OF 34 CA COPYRIGHT 2003 ACS

AB Corynetoxins, the causative agents of annual **ryegrass** toxicity, and tunicamycins are members of the tunicaminy-uracil **antibiotic** group and are specific inhibitors of the enzyme, uridine diphospho N-acetylglucosamine:dolichyl phosphate (N-acetylglucosamine-1-phosphate) transferase. It has been shown that in sheep treated parenterally with a single dose of tunicamycin, there is a time- and dose-dependent decrease in liver microsomal GlcNAc-1-P transferase activity. This study was undertaken to measure the time taken for GlcNAc-1-P transferase activity to return to normal after inhibition by a single s.c. dose of tunicamycin. The study was done in two species: sheep, which are sensitive to the toxins and adult female rats, which are about 15-fold more resistant to lethal tunicamycin poisoning than sheep and about 50% more resistant than male rats.

AN 129:271707 CA

TI Reduction and recovery of N-acetylglucosamine-1-phosphate transferase activity in the liver of sheep and rats after a single subcutaneous dose of tunicamycin

AU Stewart, P. L.; May, C.; Jago, M. V.

CS Plant Toxins Unit, CSIRO Australian Animal Health Laboratory, Geelong,
3220, Australia

SO Australian Veterinary Journal (1998), 76(4), 287-288

CODEN: AUVJA2; ISSN: 0005-0423

PB Australian Veterinary Association

DT Journal

LA English

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 34 MEDLINE DUPLICATE 2

AB The neurological disease of livestock known as annual **ryegrass** toxicity, caused by ingestion of bacterial toxins called corynetoxins, has been shown to be produced experimentally by injection of tunicamycin, a related **antibiotic**. In this study the effects of tunicamycin inhibition on the activity of the enzyme, N-acetylglucosamine-1-phosphate transferase, in sheep liver rough microsomes were measured in vitro and in vivo. Enzyme activity was dependent on Triton X-100 and exogenous dolichyl phosphate for maximal activity, although there was measurable activity in their absence. The transferase enzyme was very sensitive to in vitro (inhibition can be detected below 10 ng ml⁻¹). In vivo, sheep treated parenterally with a single dose of tunicamycin showed a time and dose-dependent decrease in enzyme activity, which was almost completely inhibited for up to 14 days after a sublethal dose of toxin. In addition, the yield of rough microsomes was lower from toxin-treated sheep than from control animals.

AN 1998216881 MEDLINE

DN 98216881 PubMed ID: 9557802

TI Activity of N-acetylglucosamine-1-phosphate transferase in sheep liver microsomes: in vivo and in vitro inhibition by tunicamycin.

AU Stewart P L

CS CSIRO Australian Animal Health Laboratory, Geelong, Victoria.

SO RESEARCH IN VETERINARY SCIENCE, (1998 Jan-Feb) 64 (1) 31-5.

Journal code: 0401300. ISSN: 0034-5288.

CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199806
ED Entered STN: 19980618
Last Updated on STN: 19980618
Entered Medline: 19980608

L8 ANSWER 5 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB A set of 25 different media, selected for their ability to support the growth of a large number of bacteria, yielded between four to seven times more morphologically distinct bacteria from **ryegrass** and alfalfa roots and soil samples when used for plate counting than a single medium. The 25 media in the selection included some of the commonly used media supplemented with **antibiotics** or toxicants and media containing only a single nutrient. Media used singly included King's B, Luria-Bertani, Nutrient Agar, Tryptic Soy Agar, and Cold-extracted Soil Extract Agar. Based on the results of this study we recommend the use of a set of different media, as opposed to one or two media, in order to increase the efficiency of plate counting method for estimating bacterial diversity.

AN 1997:489218 BIOSIS
DN PREV199799788421
TI Increasing the efficiency of the plate counting method for estimating bacterial diversity.
AU Balestra, G. M.; Misaghi, I. J. (1)
CS (1) Dep. Plant Pathol., Univ. Ariz., Tucson, AZ 85721 USA
SO Journal of Microbiological Methods, (1997) Vol. 30, No. 2, pp. 111-117. ISSN: 0167-7012.
DT Article
LA English

L8 ANSWER 6 OF 34 MEDLINE DUPLICATE 3
AB Tunicamycin belongs to a group of **antibiotics** which can cause severe and often fatal neurological malfunction in animals, commonly known as "annual **ryegrass** toxicity." At the cellular level, tunicamycin is a potent glycosylation inhibitor which is often used to elucidate the importance of glycosylation in protein functions. Earlier reports suggested that tunicamycin was able to interfere with the binding of nerve growth factor to its receptors. In this report, we showed that tunicamycin was able to kill sympathetic neurons in cultures. The mechanism of cell death was observed to be similar to that of "programmed cell death" in sympathetic neurons induced by nerve growth factor deprivation. Such tunicamycin-induced cell death could be prevented by the protein synthesis inhibitor cycloheximide, which was known to prevent the programmed cell death in sympathetic neurons. These results demonstrated that, in addition to the proven CNS neurotoxicity in animals, tunicamycin causes programmed cell death in peripheral (sympathetic) neurons.

AN 96178041 MEDLINE
DN 96178041 PubMed ID: 8635535
TI Specific toxicity of tunicamycin in induction of programmed cell death of sympathetic neurons.
AU Chang J Y; Korolev V V
CS Department of Anatomy, University of Arkansas for Medical Sciences, Little Rock, 77205, USA.
NC NS32253 (NINDS)
SO EXPERIMENTAL NEUROLOGY, (1996 Feb) 137 (2) 201-11.
Journal code: 0370712. ISSN: 0014-4886.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals

EM 199607
ED Entered STN: 19960719
Last Updated on STN: 19960822
Entered Medline: 19960711

L8 ANSWER 7 OF 34 MEDLINE DUPLICATE 4
AB Plant toxins are the chemical defenses of plants against herbivory. Grasses have relatively few intrinsic toxins, relying more on growth habit to survive defoliation and endophytic fungal toxins as chemical defenses. Forage grasses that contain intrinsic toxins include *Phalaris* spp. (tryptamine and carboline alkaloids), sorghums (cyanogenic glycosides), and tropical grasses containing oxalates and saponins. Toxic effects of these grasses include neurological damage (*Phalaris* staggers), hypoxia (sudangrass), saponin-induced photosensitization (*Brachiaria* and *Panicum* spp.), and bone demineralization (oxalate-containing grasses). Endophytic toxins in grasses include ergot alkaloids in tall fescue and tremorgens (e.g., lolitrem B) in perennial **ryegrass**. Lolitrems cause neurological effects, producing the **ryegrass** staggers syndrome. Annual **ryegrass** toxicosis is caused by corynetoxins, which are chemically similar to tunicamycin **antibiotics**. Corynetoxins are produced by *Clavibacter* bacteria that parasitize a nematode, *Anguina agrostis*, that may infect annual **ryegrass**. Corynetoxins inhibit glycoprotein synthesis, causing defective formation of various blood components of the reticulo-endothelial system. Another mycotoxin in **ryegrass** is sporidesmin, which causes liver damage and secondary photosensitization (facial eczema). *Fusarium* toxins such as zearalenone and trichothecenes also occur in forage grasses. Kikuyugrass poisoning results in severe damage to the ruminal epithelium and omasal mucosa, and neurological signs. The causative agent, which may be associated with army worm predation of the grass, has not been identified. The properties and significance of these toxins are reviewed.

AN 95332158 MEDLINE
DN 95332158 PubMed ID: 7608026
TI Endogenous toxins and mycotoxins in forage grasses and their effects on livestock.
AU Cheeke P R
CS Department of Animal Sciences, Oregon State University, Corvallis 97331-6702, USA.
SO JOURNAL OF ANIMAL SCIENCE, (1995 Mar) 73 (3) 909-18. Ref: 84
Journal code: 8003002. ISSN: 0021-8812.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199508
ED Entered STN: 19950828
Last Updated on STN: 19950828
Entered Medline: 19950816

L8 ANSWER 8 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB A multiple-antibiotic resistant *E. coli* was applied to **rye-grass** covered field mini-plots to simulate point-source contamination. Using three mini-plots for testing and a fourth as a control, the ability of the tracer bacterium to survive under field conditions was studied. Three test plots each received separately 10⁷, 10⁸, or 10¹⁰ cfu mL⁻¹ *E. coli* grown for 24 h in 5 L one-third strength Tryptic soy broth. In Phase I of the study, it was determined that the tracer disappeared from leaf surfaces of **rye-grass** covering the plots after 41 days. In Phase II, determination of the presence of the tracer in the top 2" (5 cm) of soil after two months elapsed time indicated that tracer cfu/g dry wt. of soil had declined five, three, and three-logs for test plots 1, 2, and 3. In Phase

III, subsurface soil sampling using a soil auger on the three test minei-plots indicated the tracer had penetrated through the top-soil and into the underlying B horizon (20 to 50 cm down). In Phase IV, detailed sampling by excavation of the subsurface soil Horizons of the third test mini-plot showed that the tracer had also penetrated through the hardpan (C Horizon) located 0.6 m below the surface to enter the groundwater (1.06 m deep) (Phase V). E. coli counts fell precipitously to 10-3 cfu g-1 in soil and then, in the groundwater at the groundwater-soil interface, persisted at a concentration of 10-3 cfu 100 mL-1 for 2 yr. As time past, tracer counts fell to 145 cfu/100 mL in 6 yr rose to 820 cfu 100 mL-1 in 1986 (8 yr elapsed time), and then fell to 25 cfu 100 mL-1 in 1991 after 13 yr. Serotyping of 1986 E. coli isolates indicated that 62% were of the original tracer serotype (0.128:B12) while only 43% of the 1991 isolates were of the same serotype. The penetration rate of the tracer down through the mini-plot soil into the groundwater was 0.02 m day-1 while downslope dispersion occurred at an estimated rate of 1.0 m day-1. The implications of the above findings are discussed.

AN 1995:391376 BIOSIS
 DN PREV199598405676
 TI Thirteen-year survival study of an environmental Escherichia coli in field mini-plots.
 AU Sjorgren, Robert E.
 CS Dep. Microbiol. Mol. Genetics, Univ. Vermont, Burlington, VT 05405 USA
 SO Water Air and Soil Pollution, (1995) Vol. 81, No. 3-4, pp. 315-335.
 ISSN: 0049-6979.
 DT Article
 LA English

L8 ANSWER 9 OF 34 MEDLINE DUPLICATE 5
 AB Agrobacterium radiobacter K84 is an effective, commercially applied, biological control agent for the plant disease crown gall, yet little is known about the survival and dissemination of K84. To trace K84 in the environment, spontaneous antibiotic-resistant mutants were used. Growth rates and phenotypes of streptomycin- or rifampin-resistant K84 were similar to those of the parental K84, except the rifampin-resistant mutant produced less agrocin 84 as determined by bioassay. K84 and a strain of Agrobacterium tumefaciens established populations averaging 10(5) CFU/g in the rhizosphere of cherry and persisted on roots for 2 years. K84 established rhizosphere populations between 10(4) and 10(6) CFU/g on cherry, ryegrass, and 11 other herbaceous plants. Populations of K84 declined substantially in fallow soil or water over a 16-week period. K84 was detected in the rhizosphere of ryegrass located up to 40 cm from an inoculum source, indicating lateral dissemination of K84 in soil. In gall tissue on cherry, K84 established populations of 10(5) CFU/g, about 10- to 100-fold less than that of the pathogen. These data demonstrate that K84 persists for up to 2 years in a field environment as a rhizosphere inhabitant or in association with crown gall tissue.

AN 93362987 MEDLINE
 DN 93362987 PubMed ID: 8357247
 TI Fate of Agrobacterium radiobacter K84 in the environment.
 AU Stockwell V O; Moore L W; Loper J E
 CS Department of Botany and Plant Pathology, Oregon State University, Corvallis.
 SO APPLIED AND ENVIRONMENTAL MICROBIOLOGY, (1993 Jul) 59 (7) 2112-20.
 Journal code: 7605801. ISSN: 0099-2240.
 CY United States
 DT Journal; Article; (JOURNAL ARTICLE)
 LA English
 FS Priority Journals
 EM 199309
 ED Entered STN: 19931008
 Last Updated on STN: 19970203
 Entered Medline: 19930917

L8 ANSWER 10 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
6

AB A *Streptomyces* sp. has been isolated from perennial **ryegrass** seedling tissues from which it emerged in liquid culture after surface sterilization of seed. In submerged fermentation the *Streptomyces* produced 1-N-methylalbonoursin (1), a fluorescent and weakly **antibiotic** metabolite which was identified by ms and X-ray crystallography and further characterized by, uv, 1H-, and 13C-nmr spectroscopy. The biosynthesis of the diketopiperazine skeleton of compound 1 from leucine and phenylalanine was demonstrated. A close affinity of the *Streptomyces* sp. with *Streptomyces albus*, from which this metabolite was first isolated, is implied. The possibility that the *Streptomyces* sp. should be recognized as an endophyte of **ryegrass** is discussed.

AN 1993:431788 BIOSIS

DN PREV199396086413

TI Biosynthesis of 1-N-methylalbonoursin by an endophytic *Streptomyces* sp. isolated from perennial ryegrass.

AU Gurney, Karen A.; Mantle, Peter G.

CS Dep. Pure and Applied Biol., Univ. Leeds, Leeds, England UK

SO Journal of Natural Products (Lloydia), (1993) Vol. 56, No. 7, pp. 1194-1198.

ISSN: 0163-3864.

DT Article

LA English

L8 ANSWER 11 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AN 1991:537128 BIOSIS

DN BR41:126863

TI EFFECTS OF ARDACIN UPON GROWTH OF CATTLE GRAZING PASTURES OF VARYING NUTRITIONAL CONTENT.

AU YSUNZA F; ELLIS W C; MADDEN C B; LINDSEY T

CS TEX. AGRIC. EXP. STN., COLLEGE STATION, TEX., USA.

SO 83RD ANNUAL MEETING OF THE AMERICAN SOCIETY OF ANIMAL SCIENCE, LARAMIE, WYOMING, USA, AUGUST 6-9, 1991. J ANIM SCI. (1991) 69 (SUPPL 1), 265. CODEN: JANSAG. ISSN: 0021-8812.

DT Conference

FS BR; OLD

LA English

L8 ANSWER 12 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
7

AB A range of one- and two-dimensional techniques has been used to fully assign the 1H n.m.r. spectrum of corynetoxin H17a, an **antibiotic** in the tunicamycin group produced by a bacterium infecting the seedheads of annual **ryegrass** (*Lolium rigidum*). The techniques applied included selective decoupling, COSY and 2D-INADEQUATE. The derived coupling constants within the sugar rings allowed the stereochemistry of the glycosidic linkages to be unambiguously determined as .alpha.-glucosaminyl .beta.-galactosaminyl.

AN 1989:445432 BIOSIS

DN BA88:93704

TI UNAMBIGUOUS STEREOCHEMICAL ASSIGNMENT OF THE GLYCOSIDIC LINKAGES OF CORYNETOXINS BY PROTON NMR.

AU CRAIK D J; GOSPER J J; CULVENOR C C J

CS SCH. PHARM. CHEM., VICTORIAN COLL. PHARM. LTD., PARKVILLE, VIC. 3052.

SO AUST J CHEM, (1989) 42 (4), 541-548.

CODEN: AJCHAS. ISSN: 0004-9425.

FS BA; OLD

LA English

L8 ANSWER 13 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.

AN 1989:421316 BIOSIS

DN BR37:76779

TI SOIL SURVIVAL OF ESCHERICHIA-COLI LABORATORY MICROCOSMS AND FIELD PLOTS.
 AU SJOGREN R E
 CS UNIV. VERMONT, BURLINGTON, VERMONT.
 SO 89TH ANNUAL MEETING OF THE AMERICAN SOCIETY FOR MICROBIOLOGY, NEW ORLEANS,
 LOUISIANA, USA, MAY 14-18, 1989. ABSTR ANNU MEET AM SOC MICROBIOL. (1989)
 89 (0), 353.
 CODEN: ASMACK. ISSN: 0094-8519.
 DT Conference
 FS BR; OLD
 LA English

L8 ANSWER 14 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 AB Populations of *Thielaviopsis basicola* decreased during the first 2 weeks
 following introduction in soils planted to bean [*Phaseolus vulgaris*
 (host)], rye [*Secale cereale*] (nonhost), and in fallow
 soil, then began to increase in soils planted to beans. The increase in
 numbers was associated with increase in lesions on the surface of bean
 roots. Pathogen populations in soils planted to rye decreased as compared
 to fallow soil. Extracts from soil in which rye had been decomposing for
 30 days or longer inhibited the growth of *T. basicola*. In soil containing
 decomposing rye residues the severity of root rot caused by *T. basicola* was
 reduced in subsequently planted highly susceptible tobacco cv. Coker.
 Indigenous soil bacteria, of which 68% were antagonistic to *T. basicola*,
 increased during decomposition of rye residues. It appears that the
 disease suppressing effects of rye occur during its growth and during its
 decomposition and is associated with microbial antagonisms and
 antibiotic production with rye as substrate.
 AN 1989:430731 BIOSIS
 DN BA88:88989
 TI EFFECT OF HOST NONHOST AND FALLOW SOIL ON POPULATIONS OF
 THIELAVIOPSIS-BASICOLA AND SEVERITY OF BLACK ROOT ROT.
 AU REDDY M S; PATRICK Z A
 CS DEP. BOT., UNIV. TORONTO, TORONTO, ONT. M5S 1A1.
 SO CAN J PLANT PATHOL, (1989) 11 (1), 68-74.
 CODEN: CJPPD6. ISSN: 0706-0661.
 FS BA; OLD
 LA English

L8 ANSWER 15 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
 AB A pathogenic *Pseudomonas syringae* strain resistant to rifampicin and
 nalidixic acid was sprayed upon and colonized maple twigs and perennial
 ryebrass. The inoculated twigs were sampled at intervals of 2-3 weeks from
 July 1985 to September 1986, and epiphytic populations of the marked
 strain recovered during this time ranged from undetectable to 104
 colony-forming units/g. The results showed that this strain of *P. syringae*
 could overwinter on maple twigs and potentially serve as a source of
 inoculum in the spring. Aerial dispersal was also investigated. The marked
 strain inoculated onto grass growing in pots was detected on medium in
 inverted petri plates, on maple leaves and with an Andersen sampler
 positioned from 12 to 100 cm above the grass. The number of detectable
 cells that dispersed vertically upwards was low even in the presence of
 wind, rain, or irrigation water. The marked strain inoculated onto maple
 branches was isolated from grasses under the inoculated trees, showing
 that *P. syringae* was dispersed downward. Lateral dispersal of the marked
 strain from inoculated to uninoculated trees was not detected. The
 identity of the antibiotic-resistant strain isolated from the trees and
 grasses was confirmed by DNA restriction-fragment profile analysis.
 AN 1989:164421 BIOSIS
 DN BA87:86522
 TI SURVIVAL AND DISPERSAL OF A MARKED STRAIN OF PSEUDOMONAS-SYRINGAE IN A
 MAPLE NURSERY.
 AU MALVICK D K; MOORE L W
 CS DEP. BOTANY AND PLANT PATHOL., OREGON STATE UNIV., CORVALLIS, OREGON
 97331-2902, USA.

SO PLANT PATHOL (LOND), (1988) 37 (4), 573-580.
CODEN: PLPAAD. ISSN: 0032-0862.
FS BA; OLD
LA English

L8 ANSWER 16 OF 34 MEDLINE DUPLICATE 8
AB Guinea pigs were injected with tunicamycin and the sequential morphological alterations in the brain examined to investigate further the pathogenesis of cerebral lesions in this experimental model of annual **ryegrass** toxicity, a central nervous system disease of livestock caused by members of the tunicamycin group of **antibiotics**. Brain damage was most commonly observed in the cerebellum, and the important alterations in the development of degenerative parenchymal lesions appeared to be largely referable to changes in small blood vessels. Endothelial damage, with increased vascular permeability, resulted in capillary obstruction leading to localised ischaemia and hypoxic neuronal damage. There was evidence for several possible mechanisms which may have contributed to vascular occlusion.

AN 88206732 MEDLINE
DN 88206732 PubMed ID: 3364162
TI Pathological and pathogenetic changes in the central nervous system of guinea pigs given tunicamycin.
AU Finnie J W; O'Shea J D
CS Department of Agriculture and Rural Affairs, University of Melbourne, Parkville, Victoria, Australia.
SO ACTA NEUROPATHOLOGICA, (1988) 75 (4) 411-21.
Journal code: 0412041. ISSN: 0001-6322.
CY GERMANY, WEST: Germany, Federal Republic of
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198805
ED Entered STN: 19900308
Last Updated on STN: 19900308
Entered Medline: 19880531

L8 ANSWER 17 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 9

AB A unique mixture of toxic tunicaminylluracil **antibiotics**, closely related to the corynetoxins which cause annual **ryegrass** toxicity and to the tunicamycins, has been identified in rain-damaged, stored wheat implicated in a fatal intoxication of pigs. The toxins, present at a level of approximately 4.5 mg per kg, were isolated by preparative t.l.c. They displayed specific inhibition of uridine diphospho-N-acetylglucosamine:dolichol-phosphate N-acetylglucosamine-1-phosphate transferase and bacterial inhibition consistent with this type of **antibiotic**, and produced symptoms in rats identical with those associated with the tunicamycin and corynetoxin complexes. Chemical identification, based on t.l.c., h.p.l.c., co-chromatography with authentic toxins and catalytic hydrogenation, was confirmed by fast atom bombardment mass spectrometry. The origin of these toxins is unknown, but the unique mixture of components detected suggests a previously unreported tunicaminylluracil **antibiotic**-producing microbial source.

AN 1988:381254 BIOSIS
DN BA86:65164
TI TOXIC TUNICAMINYLLURACIL ANTIBIOTICS IDENTIFIED IN WATER-DAMAGED WHEAT RESPONSIBLE FOR THE DEATH OF PIGS.
AU COCKRUM P A; CULVENOR C C L; EDGAR J A; JAGO M V; PAYNE A L; BOURKE C A
CS DIV. ANIMAL HEALTH, CSIRO, ANIMAL HEALTH RES. LAB., PRIVATE BAG NO. 1, P.O., PARKVILLE, VIC. 3052.
SO AUST J AGRIC RES, (1988) 39 (2), 245-254.
CODEN: AJAEA9. ISSN: 0004-9409.
FS BA; OLD
LA English

L8 ANSWER 18 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
10

AB Corynetoxin complex is the family of tunicamycin-like **antibiotics** isolated from annual **ryegrass** (*Lolium rigidum*) seedheads infected with a plant pathogenic *Corynebacterium* and identified as the causative toxins for annual **ryegrass** toxicity (ARGT) in Australia. Only trace amounts of corynetoxins have been reported to be produced in vitro. Enhanced in vitro production of corynetoxins by *Corynebacterium* sp. has now been demonstrated. The important conditions required were growth on an agar surface, absence of light, low incubation temperature and strain of the organism. Strains of the *Corynebacterium* sp. grown under conditions not supporting corynetoxin production failed to produce corynetoxins when subsequently grown under more favourable conditions. Even when maintained under the most favourable conditions, toxigenicity of strains declined on repeated subculturing. While levels of toxin typically produced in vitro were only about 5% of those found in infected **ryegrass** seedheads, they were high enough to be a useful source of corynetoxins for experimental purposes.

AN 1988:335209 BIOSIS

DN BA86:41760

TI PRODUCTION OF CORYNETOXINS IN-VITRO BY CORYNEBACTERIUM-SP ISOLATED FROM ANNUAL RYEGRASS SEEDHEADS.

AU PAYNE A L; COCKRUM P A

CS DIVISION ANIMAL HEALTH, CSIRO, PRIVATE BAG NO. 1, P.O., PARKVILLE 3052.

SO AUST J AGRIC RES, (1988) 39 (1), 63-70.

CODEN: AJAEA9. ISSN: 0004-9409.

FS BA; OLD

LA English

L8 ANSWER 19 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
11

AB The effect of inoculation of crested wheatgrass (*Agropyron cristatum* L.), perennial **ryegrass** (*Lolium perenne* L.) and white clover (*Trifolium repens* L.) with the soil diazotroph *Bacillus polymyxa* was studied. Plant growth responses to inoculation varied from slightly negative (perennial **ryegrass**) to highly positive (white clover and crested wheatgrass) when root, shoot and plant dry weights were measured. Root-to-shoot ratios were also increased in the latter species. Seedling emergence in crested wheatgrass was shown to be enhanced by inoculation with the bacterium. Possible mechanisms of the growth response include suppression of pathogenic organisms in the rhizosphere by the inoculant strain, root-associated nitrogen fixation, solubilization of phosphorus compounds or the bacterial production of plant growth-promoting substances. Use of sterilized soil in experiments and a lack of **antibiotic** production by the *Bacillus* render the first possibility unlikely. However, in vitro assays showed the bacterium to possess an active nitrogenase, to be capable of solubilizing organic but not inorganic phosphate compounds, and to produce indoleacetic acid, but not detectable amounts of cytokinins or gibberellins. Experimentation with *A. cristatum* suggested solubilization of P may be involved in enhanced seedling emergence, but neither N fixation nor phosphate solubilization were the primary contributing factors to the observed growth response. The data support the contention that production of growth-promoting compounds similar in activity to indoleacetic acid by the bacterium is the likely stimulus for the observed increase in plant productivity.

AN 1988:108233 BIOSIS

DN BA85:53703

TI RESPONSE OF CRESTED WHEATGRASS AGROPYRON-CRISTATUM L. PERENNIAL RYEGRASS LOLIUM-PERENNE AND WHITE CLOVER TRIFOLIUM-REPENS L. TO INOCULATION WITH BACILLUS-POLYMYXA.

AU HOLL F B; CHANWAY C P; TURKINGTON R; RADLEY R A

CS DEP. PLANT SCI., UNIV. B.C., VANCOUVER, CAN. V6T 2A2.

SO SOIL BIOL BIOCHEM, (1988) 20 (1), 19-24.

CODEN: SBIOAH. ISSN: 0038-0717.

FS BA; OLD
LA English

L8 ANSWER 20 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
12

AB 1. For the germination of *Secale cereale* caryopses the temperature limit between 13 and 26.degree. C was optimal. The temperature maximum of the length of growth of the coleoptiles and primary leaves as well as that of the breach of the primary leaf through the coleoptile lies near 26.degree. C. 2. Between 13 and 26.degree. C the germination is not influenced by chloramphenicol and from 32 to 38.degree. C it is promoted. The length of growth of the coleoptiles and primary leaves is inhibited by chloramphenicol between 13 and 32.degree. C, but promoted near 38.degree. C. The breach of the primary leaf is inhibited by chloramphenicol between 20 and 32.degree. C and activated near 35.degree. C. 3. Light does not influence the germination, but the coleoptiles and primary leaves are shorter and the breach of the primary leaves takes place in an increased measure. The inhibiting effect of chloramphenicol in the light is by far weaker than in the dark. A. Penicillin does not influence the development of *Secale cereale* caryopses. 5. At temperatures from 32 to 38.degree. C the germination is stimulated by 0,1% solution of bromine.

AN 1987:142513 BIOSIS

DN BA83:71563

TI INVESTIGATIONS ON THE DEVELOPMENT OF RYE CARYOPSES **SECALE-CEREALE** L. IN DEPENDENCE OF TEMPERATURE LIGHT AND **ANTIBIOTICS**.

AU WEJNAR R; EBERT K; HARZER I; KLINKE C

CS SEKT. BIOL. DER FRIEDRICH-SCHILLER-UNIV. JENA, WISSENSCHAFTSBEREICH PFLANENPHYSIOL.

SO WISS Z FRIEDRICH-SCHILLER-UNIV JENA NATURWISS REIHE, (1986 (RECD 1987)) 35 (5), 683-687.

CODEN: WZFREN.

FS BA; OLD

LA German

L8 ANSWER 21 OF 34 CA COPYRIGHT 2003 ACS

AB Corynetoxins are the causative agents of annual **ryegrass** toxicity and are found in seed-heads infected by *Corynebacterium rathayi*. Corynetoxins are members of a subclass of nucleoside complexes, and are structurally closely related to the tunicamycin group of **antibiotics**. Corynetoxin and tunicamycin consist of uracil, a C1-amino sugar named "tunicamine", N-acetyl-D-glucosamine and a fatty acid. They differ from each other only in the fatty acid moiety. Two corynetoxins and four tunicamycins, as well as ten analogs, have been synthesized.

AN 105:134250 CA

TI Total synthesis of corynetoxins and tunicamycins

AU Suami, Tetsuo

CS Fac. Sci. Technol., Keio Univ., Yokohama, 223, Japan

SO Bioactive Molecules (1986), 1(Mycotoxins Phycotoxins), 265-76

CODEN: BMOLEY; ISSN: 0921-0687

DT Journal; General Review

LA English

L8 ANSWER 22 OF 34 CA COPYRIGHT 2003 ACS

AB The effect of gut microflora on the nutritional value of **ryegrass** (*Lolium perenne* L.)-white clover (*Trifolium repens* L.) leaf protein conc. (LPC) was studied. The effects of giving a diet contg. LPC as the main protein source to chickens was compared to the effects of giving a diet contg. heat-treated soybean meal (SBM). Supplementation of the LPC diet with an **antibiotic** (Neomix) improved growth and increased the mean amino acid digestibility by .apprx.70%. Chickens given the diet contg. LPC tended to have a higher level of C19 cyclopropane fatty acid in

the excreta than chickens given the SBM diet. This indicated that consumption of the LPC diet influenced the nature and/or activity of the gut microflora, and that gut microflora influenced the nutritional value of LPC.

AN 105:225059 CA

TI Influence of gut microflora on the nutritional value of ryegrass-white clover leaf protein concentrate when consumed by chickens

AU Johns, D. C.

CS Poult. Res. Cent., Massey Univ., Palmerston North, N. Z.

SO New Zealand Journal of Agricultural Research (1986), 29(2), 257-62

CODEN: NEZFA7; ISSN: 0028-8233

DT Journal

LA English

L8 ANSWER 23 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 13

AB Definitive evidence is presented for the 1st time for stable gene transfer to cultured cells in a plant of the family Gramineae, *Lolium multiflorum* (Italian **ryegrass**), using DNA transformation of protoplasts from a non-morphogenic cell culture. A construction consisting of expression signals from gene VI of Cauliflower Mosaic virus joined to the aminoglycoside (neomycin) phosphotransferase gene (APH(3')II) from transposon Tn5 conferred resistance to the **antibiotic** G-418 to cell colonies arising from transformed protoplasts. By demonstrating a tight correlation between the resistant phenotype, the physical presence of the foreign gene and the presence of the active gene product we have shown that these colonies are true transformants and that a gene which is expressed well in dicotyledenous plants is also expressed in cells of graminaceous monocots.

AN 1985:388434 BIOSIS

DN BA80:58426

TI DIRECT GENE TRANSFER TO CELLS OF A GRAMINACEOUS MONOCOT.

AU POTRYKUS I; SAUL M W; PETRUSKA J; PASZKOWSKI J; SHILLITO R D

CS FRIEDRICH MIESCHER INST., P.O. BOX 2543, CH-4002 BASEL, SWITZ.

SO MOL GEN GENET, (1985) 199 (2), 183-188.

CODEN: MGGEAE. ISSN: 0026-8925.

FS BA; OLD

LA English

L8 ANSWER 24 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE 14

AB The corynetoxins, toxic metabolites of *C. rathayi* formed in galled seed-heads of infected annual **ryegrass**, *L. rigidum*, are new members of the tunicamycin group of **antibiotics**. They consist of N-acetylglucosaminyl-tunicaminy-uracil in amide linkage with fatty acids which differ in certain respects from those present in the tunicamycins. The corynetoxin acids are of slightly longer chain length, C15-C19, occur in a .beta.-hydroxy as well as saturated and .alpha.,.beta.-unsaturated series, and have anteiso, iso and normal chain terminations. .beta.-Hydroxy acids have not been observed previously in the tunicamycin group and anteiso chains were reported only recently in the streptovirudin subgroup. Stereochemical identity of the C11-amino sugar in the corynetoxins with the tunicamine part of the tunicamycins is demonstrated by formation of a common hydrolysis product, di(N-trifluoroacetyl)glucosaminyl-tunicaminy-uracil. Analysis of the 13C and proton NMR spectra of the main components, corynetoxins H17a and U17a, confirms the stereochemistry proposed for tunicamine, except that the glycosidic linkages are changed to .alpha.-galactosamine, .beta.-glucosamine.

AN 1984:283787 BIOSIS

DN BA78:20267

TI STRUCTURE OF THE CORYNE TOXINS METABOLITES OF CORYNEBACTERIUM-RATHAYI RESPONSIBLE FOR TOXICITY OF ANNUAL RYE GRASS LOLIUM-RIGIDUM PASTURES.

AU FRAHN J L; EDGAR J A; JONES A J; COCKRUM P A; ANDERTON N; CULVENOR C C J

CS DIV. ANIM. HEALTH, CSIRO, PRIVATE BAG NO. 1, PARKVILLE, VIC. 3052.
SO AUST J CHEM, (1984) 37 (1), 165-182.
CODEN: AJCHAS. ISSN: 0004-9425.
FS BA; OLD
LA English

L8 ANSWER 25 OF 34 CA COPYRIGHT 2003 ACS
AB A review and discussion with 23 refs. relating the phys., chem., and biol. properties of corynetoxins with those of tunicamycin [11089-65-9].
AN 100:46361 CA
TI Corynetoxins, the causal agents of annual **ryegrass** toxicity shown to be closely related to the **antibiotic** tunicamycin
AU Vogel, Paul; Styne, Brian A.; Coackley, William; Yeoh, George T.; Peet, Ronald L.; Takatsuki, Akira; Petterson, David S.
CS Dep. Agric., South Perth, 6151, Australia
SO Toxicon (1983); Suppl. 3, 477-80
CODEN: TOXIA6; ISSN: 0041-0101
DT Journal; General Review
LA English

L8 ANSWER 26 OF 34 MEDLINE DUPLICATE 15
AB The biological activities of corynetoxins, the causative agents of annual **ryegrass** toxicity, were compared with those of the closely related tunicamycins and found to be essentially identical. Both showed similar **antibiotic** activity against Newcastle disease virus and a range of gram-positive bacteria. In preparations of rat liver rough microsomes they also strongly inhibited the uridine diphospho-N-acetylglucosamine (UDP-GlcNAc):dolichol-P N-acetylglucosamine-1-phosphate (GlcNAc-1-P) transferase, an enzyme essential for N-glycosylation of glycoproteins. Pretreatment of rats with corynetoxins resulted in dose- and time-related reduction in the level of activity of this transferase in liver microsomal preparations. The implications of this reduction are discussed with reference to annual **ryegrass** toxicity, the only field disease known to be caused by tunicamycin-related compounds. Both corynetoxin and tunicamycin produced similar neurological effects and increased vascular permeability in nursing rats and they showed similar LD50-values of 137 and 132 micrograms/kg, respectively, in the nursing rats.
AN 83285488 MEDLINE
DN 83285488 PubMed ID: 6309418
TI Inhibition of glycosylation by corynetoxin, the causative agent of annual ryegrass toxicity: a comparison with tunicamycin.
AU Jago M V; Payne A L; Peterson J E; Bagust T J
SO CHEMICO-BIOLOGICAL INTERACTIONS, (1983 Jul 15) 45 (2) 223-34.
Journal code: 0227276. ISSN: 0009-2797.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 198310
ED Entered STN: 19900319
Last Updated on STN: 19900319
Entered Medline: 19831008

L8 ANSWER 27 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB A comparative study between the glycolipid toxins (corynetoxins) isolated from parasitized annual **ryegrass** and the nucleoside **antibiotic** complex tunicamycin revealed many similarities in physical, chemical and biological properties. These similarities suggest that the corynetoxins comprise another series of tunicamycin-like **antibiotics**.
AN 1982:286922 BIOSIS
DN BA74:59402
TI GLYCO LIPID TOXINS FROM PARASITIZED ANNUAL RYE GRASS LOLIUM-RIGIDUM A COMPARISON WITH TUNICAMYCIN.

AU VOGEL P; STYNES B A; COACKLEY W; YEOH G T; PETTERSON D S.
CS DEP. AGRICULTURE, JARRAH RD., SOUTH PERTH, WESTERN AUSTRALIA, 6151.
SO BIOCHEM BIOPHYS RES COMMUN, (1982) 105 (3), 835-840.
CODEN: BBRCA9. ISSN: 0006-291X.
FS BA; OLD
LA English

L8 ANSWER 28 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
16
AN 1982:136864 BIOSIS
DN BR23:66856
TI CORYNE TOXINS CAUSATIVE AGENTS OF ANNUAL RYE GRASS
LOLIUM-RIGIDUM TOXICITY THEIR IDENTIFICATION AS TUNICAMYCIN GROUP
ANTIBIOTICS.

AU EDGAR J A; FRAHN J L; COCKRUM P A; ANDERTON N; JAGO M V; CULVENOR C C J;
JONES A J; MURRAY K; SHAW K J
CS C.S.I.R.O, DIV. ANIMAL HEALTH, PRIVATE BAG NO. 1, PARKVILLE, VICTORIA
3052, AUSTRALIA.
SO J. Chem. Soc., Chem. Commun., (1982) 0 (4), 222-224.
CODEN: JCCCAT. ISSN: 0022-4936.
FS BR; OLD
LA English

L8 ANSWER 29 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AB The following fungi showed strong **antibiotic** action against *P.*
radicicola var. *graminicola* on agar medium: *Drechslera sorokiniana* (Sacc).
Sub & Jain, *Aspergillus niger* Tiegh, *Botrytis cinerea* Pers., *Trichoderma*
viride Pers. The following fungi had a moderate effect: *A. flavus* Link and
Rhizopus nigricans Ehrenb. All the remaining fungi reduced the growth of
P. radicicola only slightly. In joint infection of roots the ability of
these fungi to give strong antagonistic effect was lower; on the contrary,
the spread of *Phialophora* on **ryegrass** roots was inhibited to the
highest degree by *Ophiobolus graminis*. The attack of wheat roots was
reduced by *P. radicicola* only in *O. graminis*.
AN 1979:137841 BIOSIS
DN BA67:17841
TI THE ANTAGONISM OF PHIALOPHORA-RADICICOLA-VAR-GRAMINICOLA AND SOME FUNGI
FROM THE ROOTS OF WHEAT.
AU NOVOTNY J
CS VYZ. USTAV ZAKL. AGROTECH., 664 62 HRUSO VANY U BRNA, CZECH.
SO OCHR ROSTL, (1978) 14 (1), 35-40.
CODEN: OCROAP.
FS BA; OLD
LA Czech

L8 ANSWER 30 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.DUPLICATE
17
AB IAA promotes the growth of apical coleoptile segments of *Triticum vulgare*
'Arthur', *Hordeum vulgare* 'Bonneville 70', *Avena sativa* 'Garry', *Zea mays*
'#13', and *Secale cereale* 'Balboa'. Red light enhances
the growth of wheat apical segments but has no significant effect on the
increase in length of barley, corn, oat and rye segments. Concentrations
of puromycin dihydrochloride, actinomycin D and streptomycin sulfate which
allow growth comparable to that in distilled water, markedly inhibit
stimulation of segment elongation due to either optimal IAA or red light
(660 nm). Optimal GA and sucrose slightly stimulate apical segment growth.
There appears to be no interaction of sucrose or GA with the
antibiotic.
AN 1977:224962 BIOSIS
DN BA64:47326
TI INTERACTION OF PUROMYCIN DI HYDRO CHLORIDE ACTINOMYCIN D AND STREPTOMYCIN
SULFATE WITH IAA GIBBERELIC-ACID SUCROSE AND RED LIGHT IN APICAL
COLEOPTILE SEGMENT GROWTH.
AU LAWSON V R; BARNES C M; COLEMAN J

SO BULL TORREY BOT CLUB, (1977) 104 (2), 136-140.
CODEN: BTBCAL. ISSN: 0040-9618.
FS BA; OLD
LA Unavailable

L8 ANSWER 31 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1976:168858 BIOSIS
DN BA61:68858
TI THE CONTROL OF COMMON POTATO SCAB BY MEANS OF CULTURE METHODS.
AU WENZL H
SO Z PFLANZENKR PFLANZENSCHUTZ, (1975) 82 (6-7), 410-440.
CODEN: ZPFPA. ISSN: 0340-8159.
FS BA; OLD
LA Unavailable

L8 ANSWER 32 OF 34 BIOSIS COPYRIGHT 2003 BIOLOGICAL ABSTRACTS INC.
AN 1971:169729 BIOSIS
DN BA52:79729
TI STREPTOLYSIN INHIBITORY FACTOR IN POLLEN.
AU KVANTA E
SO ACTA CHEM SCAND, (1970) 24 (10), 3672-3680.
CODEN: ACSAA4. ISSN: 0001-5393.
FS BA; OLD
LA Unavailable

L8 ANSWER 33 OF 34 CA COPYRIGHT 2003 ACS
AB Isolation by Ishibashi (CA 62: 2002a) from the culture broth of
Helminthosporium siccans, a parasitic organism of **rye**
grass, gave a phenolic **antibiotic**, siccenin (I) m.
138.degree., [α .]16D - 150.degree. (c 7.75, CHCl₃), fungicidal esp.
against Trichophyton interdigitale and T. asteroides at 0.1 μ g./ml. I,
A 3-dimensional x-ray diffraction study was carried out on I
p-bromobenzenesulfonate ester, C₂₈H₃₃BrO₅S, m. 156.degree.. The crystals
are orthorhombic space group P2₁2₁2₁, with a 11.06, b 22.87, and c 10.34
A.; Z = 4. Three-dimensional intensity data were collected from the a and
c axes by equi-inclination Weissenberg photographs, and a total of 1537
reflections were estd. visually. The structure was solved by the heavy
atom method with several Fourier and difference Fourier syntheses. The
parameters were refined by 3 cycles of full matrix least sqs. calcns. to
an R-value of 0.155. The abs. configuration was detd. by the anomalous
dispersion effect of the Br atom for Cu K.alpha. radiation. The cis
fusion of the Decalin system may be the 1st example of the naturally
occurring drimane skeleton.

AN 67:112130 CA
TI Structure of siccenin
AU Hirai, Koichi; Nozoe, Shigeo; Tsuda, Kyosuke; Iitaka, Yoichi; Ishibashi,
Kei-jiro; Shirasaka, Makoto
CS Univ. Tokyo, Tokyo, Japan
SO Tetrahedron Letters (1967), (23), 2177-9
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English

L8 ANSWER 34 OF 34 CA COPYRIGHT 2003 ACS
AB For the practical use of N₂O-treatment, an expt. was conducted to study
the following points; (a) effect of N₂O on fertilization, (b) production
of amphidiploids from cross-pollinated florets, and (c) improvement of
culture media for the treated wheat spikes. N₂O-treatment of pollinated
florets did not disturb fertilization, which seemed to proceed rather
normally. Polysperm fertilization resulting in triploidy was not induced.
N₂O appeared to inhibit specifically cell division after fertilization,
producing polyploid plants. By suitable treatment, all resulting
seedlings became polyploid. Amphidiploids can be directly produced by
treating cross-pollinated florets with N₂O. This was demonstrated in the

cross, *Triticum aestivum* .times. **Secale cereale**. The supplement of glucose as a C source to culture media of the N₂O-treated spikes had only a slight effect on seed setting but improved markedly the endosperm development and, consequently, germination. This, in turn, allowed polyploid embryos a better chance to survive. The supplement of penicillin as an **antibiotic** to the culture media did not improve seed setting, endosperm development, and germination, but an increase in polyploidy occurrence was noticed. From Japan Sci. Rev., Biol. Sci. 13, 203(1962) (Pub. 1964).

AN 62:53302 CA

OREF 62:9475e-g

TI Production of polyploid wheat by nitrous oxide. II. N₂O-treatment during fertilization, with reference to culture media

AU Tsunewaki, K.

SO Seiken Jiho (1962), 14, 12-20

CODEN: SEZIA3; ISSN: 0080-8539

DT Journal

LA English